

REMARKS

The Examiner is thanked for the careful examination of the application. In the foregoing amendments of the claims, claim 1 has been amended to include the subject matter of claim 19, independent claim 22 has been amended in a similar manner, and new independent claims 30, 34, 35, 42 - 46 have been added.

Information Disclosure Statement

The Examiner is advised that an Information Disclosure Statement was filed on September 3, 2003, together with the required fee of \$180.00. A copy of the Information Disclosure Statement and a postcard receipt indicating receipt thereof by the U.S. Patent and Trademark Office is submitted herewith. The Examiner is respectfully requested to consider the information disclosed therein and to return an initialed copy of the form PTO-1449 to Applicants' attorney.

Double Patenting:

In response to the double patenting rejection, the Examiner's attention is directed to the fact that claims 8 and 11-14 have now been canceled in copending application serial number 10/361,856. This should obviate the double patenting rejection.

Art Rejections:

Claims 1-6 and 22-23 have been rejected under 35 U.S.C. §102(b) as being allegedly anticipated by DE 2 118 360, hereinafter Nolan.

In response to the rejection, claim 1 has been amended to include the subject matter of claim 19. And, claim 22, although it is a method claim, has been amended in a similar manner.

In view of the fact that claim 19 has not been rejected over Nolan by itself, Applicants submit that the amendments to claims 1 and 22 render the rejection based on Nolan by itself moot.

With regard to amended claim 1, Applicants will discuss the rejections of claim 19, which has been rejected under 35 U.S.C. §103(a) as being unpatentable over Nolan in view of U.S. Patent No. 4,140,667, hereinafter Brown, and Nolan in view of U.S. Patent No. 3,668,878, hereinafter Jones.

Nolan in view of Brown:

The Examiner alleges that Nolan teaches all the elements of claims 1 and 19, except “guide rollers monitored for forces applied to the pipeline.” The Examiner further alleges that Brown teaches that any suitable conventional means 22 may be used to monitor the side reactions on the pipe and pipeline alignment, to ensure the pipe is laid in a straight line. The Examiner then alleges that it would have been obvious to one of ordinary skill in the art, having the teachings of Nolan and Brown at the time the invention was made, to modify Nolan to include guide rollers monitored for forces applied to the pipeline as taught by Brown in order to ensure pipe is laid straight and excessive forces don't stress the pipeline.

However, Applicants submit that the combination would not have been obvious to one of ordinary skill in the art. Specifically, Nolan and Brown relate to different areas of technology. Nolan relates to a method for laying pipelines, whereas Brown relates to a method of forming a trench and then allowing a pipeline, which is already laid, to fall into the trench. See, e.g., in Brown, column 1, lines 7-9; column 3, lines 32-42; and column 4, lines 60-62. Accordingly, in Brown, the monitors 22 are used for monitoring a pair of guide rollers which are moving along a

pipe P that is lying horizontally on a seabed. In contrast to Brown, Nolan is intended to lower a pipe through a tower like form from a ship into the ocean. The guide rollers of Brown therefore have a completely different purpose from those in Nolan. Accordingly, it would not have been obvious to one of ordinary skill in the art to use the monitoring means of Brown, which are intended to monitor forces on the rollers to ensure that the pipe is in a straight line, i.e., that the trench is formed in the correct direction so that the eventual position of the pipeline is correct, in the tower like structure of Nolan, wherein a pipe is passed through the tower from the ship into the ocean.

Accordingly, Applicants submit that the combination is not proper.

Nolan in view of Jones:

With regard to Nolan in view of Jones, the Examiner alleges that Jones teaches that V-shaped roller assemblies 85 may be provided with force monitoring load cells to minimize pipeline stresses and tension. Jones further allegedly describes the benefits of monitoring forces to enhance operator control and prevent serious deviations in forces and that the monitoring data can allegedly be used to adjust parameters to ensure proper pipe laying. The Examiner thus concludes that it would have been obvious to one of ordinary skill in the art to modify Nolan to include guide rollers monitored for forces applied to the pipeline as taught by Jones in order to ensure that the pipe is laid properly and that the excessive forces don't stress the pipeline.

Applicants submit that Nolan relates to J-laying, whereas Jones relates to S-laying. A discussion of the differences between J-laying and S-laying may be found on pages 1 and 2 of the specification of the present application. The Examiner's

attention is also directed to the comments made by the Examiner at the top of page 2 of the Official Action dated April 9, 2003.

In addition to the information set forth in the specification, S-lay implies a double curve of the pipeline with an over bend and a sag bend, where as J-lay implies a single curvature of the pipeline. S-lay is a good technique to use in shallow water because a stinger/ramp is not required, but it is not a good technique to use in deep water, as there is a high bending force on the pipeline. Conversely, J-lay is a good technique for deep water, as the tower can be nearly vertical and no guide arrangement at the bottom of tower is required, but is not a good technique for shallow water, as the tower must be greatly inclined from the vertical. In S-lay, the stinger/ramp supports part of the weight of the pipeline. The main forces on the stinger are vertical because of the weight of the pipeline. Horizontal forces are due to transversal loads because of misalignment of the vessel out of the plane of pipeline and due to the horizontal component of the reaction force of the roller along the stinger. In a J-lay arrangement, such as in an embodiment of the present invention, the guide arrangement is subject to mainly horizontal forces due to the misalignment of the vessel and to the horizontal component of the pulling force not provided by the inclination of the tower. The lower guide arrangement having a series of rollers spaced apart along the path of the pipeline avoids the need to have a tower which is tiltable to very large angles. This is an advantage of the present invention. By monitoring the forces on the rollers, the maximum tilting angle of the tower can be limited, and the vessel movement can be controlled, thereby maintaining appropriate forces on the pipeline during the entire laying process.

In view of the differences between S-laying and J-laying set out above, Applicants submit that the teachings relating to one technique would not be applicable to the other technique. Thus, Applicants submit that it would not be obvious to combine the teachings of Nolan with that of Jones.

Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejections based on the combination of Nolan and Brown and the rejections based on the combination of Nolan and Jones.

Claim 22 has been amended in a manner similar to that of claim 1, i.e., to further define the step of monitoring the forces applied to the pipeline by rollers of the lower guide arrangement. Accordingly, claim 22 and the claims that depend therefrom are also patentable over the combination of Nolan and Brown and the combination of Nolan and Jones.

Claims 7-11 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Nolan in view of "standard bearing design". However, claims 7-11 depend either directly or indirectly from now amended claim 1, and are thus also patentable over Nolan at least for the reasons set forth above with respect to claim 1. The alleged "standard bearing design" does not overcome the deficiency of the rejection of claim 1.

Claims 12-14 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Nolan in view of "common knowledge in the art" claims 12-14 depend from claim 1, and are thus also patentable over Nolan at least for the reasons set forth above with respect to amended claim 1. The alleged "common knowledge in the art" does not overcome the deficiency of the rejection of claim 1.

Furthermore, in accordance with §§2144.02 and 2144.03 of the Manual of Patent Examining Procedure, in the event that the Examiner reasserts the rejection based on either standard bearing design or common knowledge in the art, the Examiner is respectfully requested to cite a reference in support of such standard bearing design or common knowledge in the art.

Claims 15-18 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Nolan in view of U.S. Patent No. 3,555,835, hereinafter Smith. The Examiner relies upon Smith only for its alleged teaching of guide rollers positioned below sea level. However, in view of the amendments to claim 1, claims 15-18, which depend from claim 1, are thus also patentable over Nolan in view of Smith. Smith does not overcome the deficiency of Nolan which has been discussed above with regard to claim 1.

Applicants reserve the right to further challenge the Examiner's analysis or interpretations of the various cited prior art references, and to further challenge the Examiner's alleged motivation to combine references as set forth in the Official Action, if appropriate and necessary, at an appropriate time.


To further define the protection to which Applicants are entitled, new claims 26-46 are submitted. The new claims further define various aspects of the present invention that are also not taught or suggested in the applied prior art.

In the event that there are any questions concerning this Amendment, or the application in general, the Examiner is respectfully urged to telephone the undersigned attorney so that prosecution of the application may be expedited.

Respectfully submitted,

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Date: June 14, 2004

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